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° WE CLAIM:

1. A method of producing a population of dendritic cell precursors from proliferating cell cultures, comprising  
a) providing a tissue source comprising  
5 dendritic cell precursors;

b) culturing the tissue source on a substrate in culture medium comprising GM-CSF and another factor which increases the proportion of dendritic cell precursors by inhibiting the proliferation or maturation of non-dendritic cell precursors (to produce proliferating dendritic cell precursors); and  
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c) culturing the dendritic cell precursors for a period of time sufficient to allow them to mature into mature dendritic cells.  
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2. The method of claim 1, wherein said agent inhibits macrophage proliferation or maturation.

3. The method of claim 1, wherein said tissue source  
20 is human blood.

4. The method of claim 3, wherein said agent is selected from the group consisting of IL-4 and IL-13.

5. The method of claim 4, wherein said agent is IL-4.  
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6. The method of claim 5, wherein IL-4 is present in the culture medium in the range of 500-1000 U/ml.

7. The method of claim 1, wherein the culture medium further comprise TNF- $\alpha$ .  
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8. The method according to claim 1 wherein fetal calf serum is present in the culture medium in an amount of about  
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° 1 to 15%.

9. The method according to claim 1 wherein the fetal calf serum is present in the culture medium in an amount of about 10%.

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10. The method according to claim 3 wherein GM-CSF is present in the medium at a concentration of about 1-1000 U/ml.

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11. The method according to claim 10 where the GM-CSF is present in the medium at a concentration of about 400-800 U/ml.

12. The method according to claim 11, wherein the GM-  
15 CSF is present at a concentration of about 800 U/ml.

sub  
ack  
20 13. The method according to claim 1 wherein at least one factor selected from the ~~group consisting~~ of TNF- $\alpha$ , G-CSF, IL-1 and IL-3 is present in the culture medium.

25 14. A composition comprising a dendritic cell modified antigen wherein a substance to be modified is exposed to a culture of dendritic cells prepared according to claim 1 and whereby the substance is modified by the dendritic cells to produce the modified antigen.

30 15. A method of immunizing against disease in humans or animals comprising, administering an immunogenic amount of the composition of claim 14.

16. A vaccine comprising the composition of claim 14.

35 17. A composition comprising antigen activated dendritic cells wherein dendritic cells prepared according

° to claim 1 are pulsed with an antigen and wherein the dendritic cells process the antigens to produce a modified antigen which is expressed by dendritic cells.

5 18. A method of treating autoimmune disease comprising administering to a person in need of treatment a therapeutically effective amount of the composition of claim 14 and wherein the antigen to be modified is a self-protein.

10 19. A method of treating autoimmune disease comprising administering to a person in need of treatment a therapeutically effective amount of the composition of claim 17 wherein the antigen to be modified is a self-protein.

15 20. The method of claims 18 or 19 wherein the autoimmune disease is selected from the group consisting of multiple sclerosis myasthenia gravis, atopic dermatitis and juvenile diabetes.

20 21. The method of claims 18 or 19 wherein the autoimmune disease is selected from the group consisting of multiple sclerosis and juvenile diabetes.

25 ~~22. Dendritic cell precursors prepared according to the method of claim 1.~~

30 ~~14~~ 23. The method according to claim 1 wherein cord blood serum is present in the culture medium in an amount of about 5%.

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